Changes in Dark Slope Streaks on Mars

S. K. Sidhu
Physics and Astronomy Department
Swarthmore College
500 College Ave, Swarthmore, PA 19081
USA
ssidhu1@swarthmore.edu

Center for the Study of Life in the Universe
SETI Institute
515 N Whisman Rd, Mountain View, CA 94043
USA

C. B. Phillips
Center for the Study of Life in the Universe
SETI Institute
USA

C. F. Chyba
Center for the Study of Life in the Universe
SETI Institute
USA

Department of Geological and Environmental Sciences
Stanford University
USA

Dark slope streaks are among the youngest and most dynamic features on the surface of Mars today. Orbiting spacecraft images show new streaks appearing in as little as three months, while older streaks slowly fade away. Two major classes of models have been proposed to explain how streaks form: dry models that don't require the presence of liquid water and wet models that do. We have piloted an image ratioing technique that will allow us to systematically detect and describe changes in streaks over time, perhaps yielding clues to discriminate between the wet and dry models. If slope streaks do indicate liquid water, they will have major significance in the search for life on Mars and may be important targets for future NASA missions.